

Color & Appearance Testing Program

Summary Report # 174 - 4th Qtr 2015

[About the Color Program](#), [About CTS](#)

[Key to Tables and Graphs \(Color Tests\)](#)

[Key to Tables and Graphs \(Spectro Test\)](#)

[Key to Tables and Graphs \(GlossTests\)](#)

Analysis **Analysis Name**

[408](#) [Color & Color Difference \(Paint Chips\) - 45-0](#)

[409](#) [Color & Color Difference \(Paint Chips\) Sphere](#)

[411](#) [Spectrophotometric \(Paint Chips\) - Sphere](#)

[440](#) [Gloss 60 Degree \(Paint Chips\)](#)

[442](#) [Gloss 85 Degree \(Paint Chips\)](#)

[Instrument Code List](#)

ABOUT THE PROGRAM

The Collaborative Reference Program for Color & Appearance is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance and advice provided by representatives from various instrument manufacturers. The program allows laboratories to compare periodically the performance of their testing with that of other laboratories.

Paint chip samples, which have been custom-made specifically for Collaborative Testing Services by Munsell Color, X-Rite Inc., Grand Rapids, MI, are distributed four times per year to participating laboratories. Gloss participants test two pairs of paint chip samples at different gloss levels, approximately 5-10 units apart. Color & Color Difference participants measure a set of two opaque color paint chips, selected from throughout the full color spectrum, consisting of a nonmetameric match with small color differences. These data are analyzed in two separate tables based on the conditions of measurement used. Laboratories that also participate in the Spectrophotometric analyses measure one of the opaque color chips for % reflectance at 16 wavelengths.

Please refer to each test's 'Key' for definitions of terms used in the tables and graphs and guidelines to interpreting the results. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations.

ABOUT CTS

Founded in 1971, CTS is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

If there are any questions on the report or testing program, please contact:

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Key for Color Program Web Summary Report

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.
Lab Mean	The average of the 2 test results obtained by the participant for CIE L*,a*,b* color space values.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Comparative Performance Value	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
Graphs	For each laboratory, the LAB MEAN for the first sample is plotted against the LAB MEAN for the second sample with each point representing a laboratory. The horizontal and vertical axes are the GRAND MEANS for each sample. For each test there are three plots: L*2 vs L*1, a*2 vs a*1 and b*2 vs b*1. The a* and b* plots are created using absolute values.
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse and one or more CPV are greater than critical value. See specific notes following each table for more information on why the data is excluded. It is also possible to have an "X" for individual color coordinate (L*, a* or b*) without overall "X" flag. It means that results fall outside the 99% ellipse for particular coordinate but have no CPV flags. Those results will not require any action.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

Key for Spectrophotometric Web Summary Report

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. See specific notes following each table for more information on why the data is excluded.

In addition to the DATA FLAG column, it is also possible to have an X on individual wavelength values as follows:

- X - The laboratory's mean for that wavelength is greater than a 95% deviation from the GRAND MEAN.

Key for Color Program (Gloss) Web Summary Report

WebCode Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Color Report published on the CTS web site. The Web Code for each analysis can be found in the Performance Analysis Report mailed to each participant.

Lab Mean The average of the test results obtained by the participant.

Grand Mean The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

Difference from Grand Mean The difference of the LAB MEAN from the GRAND MEAN.

Between-Lab Standard Deviation An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

Comparative Performance Value An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.

Inst Code A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).

Graphs For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above.

Data Flag DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
377LP2		D151	59.12	-11.81	21.56	0.87	0.06	-0.16	0.89	XN
		D152	59.99	-11.75	21.40					
3CBH92		D151	59.01	-11.82	21.77	1.01	0.07	-0.29	1.05	XU
		D152	60.02	-11.75	21.48					
3M9LDV	X	D151	58.73	-12.34	21.25	1.35	0.76	0.83	1.76	MG
		D152	60.08	-11.58	22.08					
3VN266	X	D151	59.17	-12.00	22.25	0.98	0.04	-0.63	1.16	GB
		D152	60.15	-11.96	21.62					
7FFJJM		D151	58.95	-12.35	21.32	0.89	0.08	-0.33	0.95	HW
		D152	59.84	-12.27	20.99					
8FWXMP		D151	58.50	-11.91	21.78	0.94	0.07	-0.28	0.98	HY
		D152	59.44	-11.84	21.51					
8Z44CK		D151	59.14	-11.87	21.67	0.78	0.08	-0.24	0.82	XO
		D152	59.92	-11.80	21.43					
B6FKVW		D151	58.85	-12.32	21.48	0.92	0.14	-0.24	0.96	HW
		D152	59.77	-12.18	21.25					
BFZRUL		D151	58.83	-11.73	21.43	0.88	0.06	-0.30	0.93	XK
		D152	59.71	-11.67	21.13					
C7U88J		D151	59.10	-12.28	21.56	0.95	0.02	-0.24	0.98	HW
		D152	60.05	-12.27	21.32					
CLM2GN		D151	59.41	-11.86	21.26	0.81	0.07	-0.45	0.93	AE
		D152	60.22	-11.79	20.82					
DCQL6P		D151	59.25	-11.87	21.69	1.03	0.10	-0.40	1.11	XZ
		D152	60.28	-11.78	21.29					
DCV6VE		D151	59.14	-12.63	21.47	0.86	0.08	-0.35	0.93	HW
		D152	59.99	-12.55	21.12					
E76TTQ		D151	58.80	-12.23	21.78	0.87	0.04	-0.20	0.89	GH
		D152	59.66	-12.19	21.58					

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
EG2YMN		D151	58.48	-11.21	20.95	0.99	0.04	-0.23	1.02	HK
		D152	59.47	-11.18	20.73					
EKZAJN	X	D151	60.07	59.10	59.13	0.88	0.90	0.90	1.55	MA
		D152	60.96	60.01	60.03					
GQ7P6H		D151	59.03	-11.91	21.98	0.95	0.05	-0.34	1.01	GH
		D152	59.98	-11.86	21.64					
H6X3WH		D151	59.18	-11.73	21.31	0.88	0.04	-0.19	0.90	MU
		D152	60.06	-11.69	21.12					
H7TKYJ		D151	58.88	-11.55	21.55	0.86	0.09	-0.35	0.93	HG
		D152	59.74	-11.46	21.20					
HGAATH		D151	59.50	-11.87	21.66	0.92	0.05	-0.26	0.96	XD
		D152	60.42	-11.82	21.41					
HRVBBD		D151	59.04	-12.17	21.53	0.87	0.09	-0.25	0.91	HW
		D152	59.91	-12.08	21.28					
JHK9PD		D151	59.01	-12.18	21.24	0.93	0.08	-0.28	0.97	HW
		D152	59.94	-12.10	20.97					
JHZVYE		D151	58.70	-11.60	21.30	0.87	0.04	-0.23	0.90	HK
		D152	59.57	-11.56	21.07					
KHG7HK		D151	58.76	-12.17	21.30	0.87	0.05	-0.22	0.89	HW
		D152	59.63	-12.12	21.08					
M48AA2		D151	59.54	-11.77	21.62	0.90	0.03	-0.19	0.91	XZ
		D152	60.43	-11.74	21.43					
MHPZ7J		D151	58.59	-12.17	21.76	1.07	0.11	-0.39	1.14	TO
		D152	59.66	-12.06	21.37					
QTYUT8		D151	59.25	-11.93	21.86	0.87	0.06	-0.19	0.89	GH
		D152	60.11	-11.87	21.67					
VRBWPW		D151	59.68	-11.61	21.27	0.91	0.06	-0.31	0.96	XX
		D152	60.59	-11.55	20.96					

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
WBX4XC		D151	59.07	-11.89	21.65	0.84	0.05	-0.23	0.87	X0
		D152	59.91	-11.84	21.43					
WVKNW2		D151	59.09	-11.83	21.82	0.95	0.05	-0.22	0.97	XZ
		D152	60.04	-11.79	21.60					
WWZTP8		D151	59.00	-11.92	21.74	0.98	0.06	-0.28	1.01	XM
		D152	59.98	-11.86	21.47					
XF9D69		D151	58.66	-11.75	21.68	0.91	0.05	-0.30	0.96	XU
		D152	59.57	-11.70	21.39					
XLU827		D151	59.14	-11.99	21.92	0.89	0.04	-0.22	0.91	GE
		D152	60.02	-11.95	21.70					
XVWR3D		D151	58.97	-12.17	21.40	0.96	0.08	-0.26	1.00	HW
		D152	59.93	-12.10	21.15					
YDYRP8		D151	59.13	-11.87	21.61	0.99	0.08	-0.32	1.04	X0
		D152	60.11	-11.80	21.29					
YRU7PZ		D151	58.82	-12.17	21.41	0.98	0.04	-0.29	1.02	HW
		D152	59.79	-12.13	21.12					
YTPRJR	X	D151	58.69	-12.21	22.54	0.93	0.05	-0.40	1.01	FA
		D152	59.62	-12.16	22.14					
Z7WXB6		D151	58.92	-12.07	21.63	0.96	0.05	-0.21	0.98	XZ
		D152	59.88	-12.03	21.42					
ZKTC8T		D151	59.05	-12.22	21.64	0.94	0.06	-0.41	1.02	HW
		D152	59.98	-12.17	21.24					
ZNCBM9		D151	58.74	-11.65	21.89	0.92	0.02	-0.18	0.94	XR
		D152	59.66	-11.63	21.71					

**Interlaboratory Testing Program for Color & Appearance
Analysis 408**

**Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

Summary Statistics

<u>Samples</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>
Grand Means							
D151	59.00	-11.95	21.57				
D152	59.92	-11.89	21.30	0.91	0.06	-0.27	0.96
Std Dev Btwn Labs							
D151	0.27	0.27	0.23				
D152	0.26	0.26	0.25	0.06	0.03	0.07	0.07

Statistics based on 36 of 40 reporting participants

Comments assigned on Data Flags for Test #408

3M9LDV(X) - High b* values for Sample D152. Large replication difference for L*, a*, and b* values on Sample D152. Large DL, Da, Db and DE values.

3VN266(X) - High b* values for Sample D151. Large replication difference for b* values on Sample D152. Large Db and DE values.

EKZAJN(X) - High L*, a* and b* values. Large Da, Db, and DE values.

YTPRJR(X) - High b* values. Large replication difference for b* values on Sample D151.

Interlaboratory Testing Program for Color & Appearance

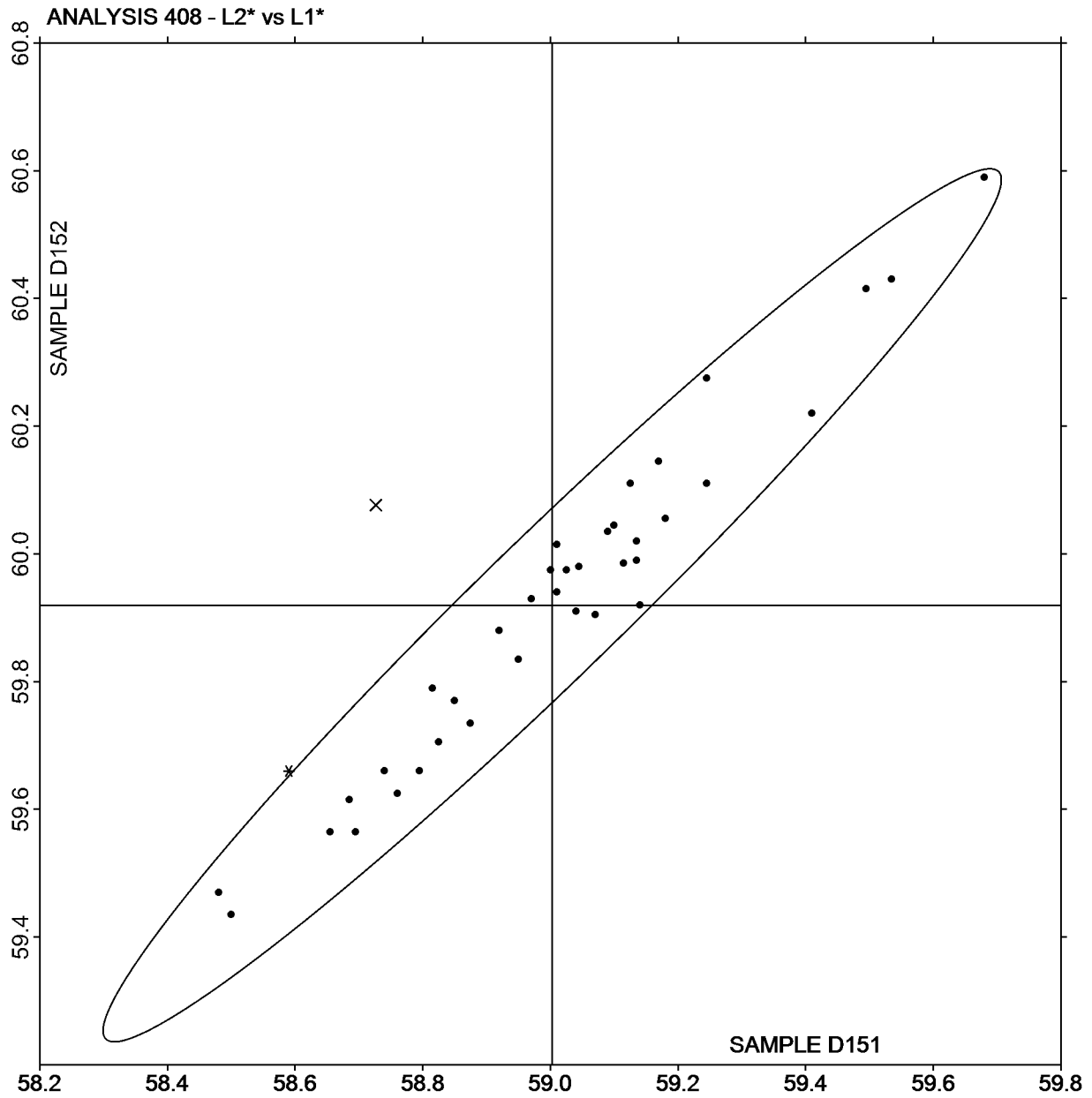
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

L2* vs L1*

SAMPLE D151 = 59.00

SAMPLE D152 = 59.92



Interlaboratory Testing Program for Color & Appearance

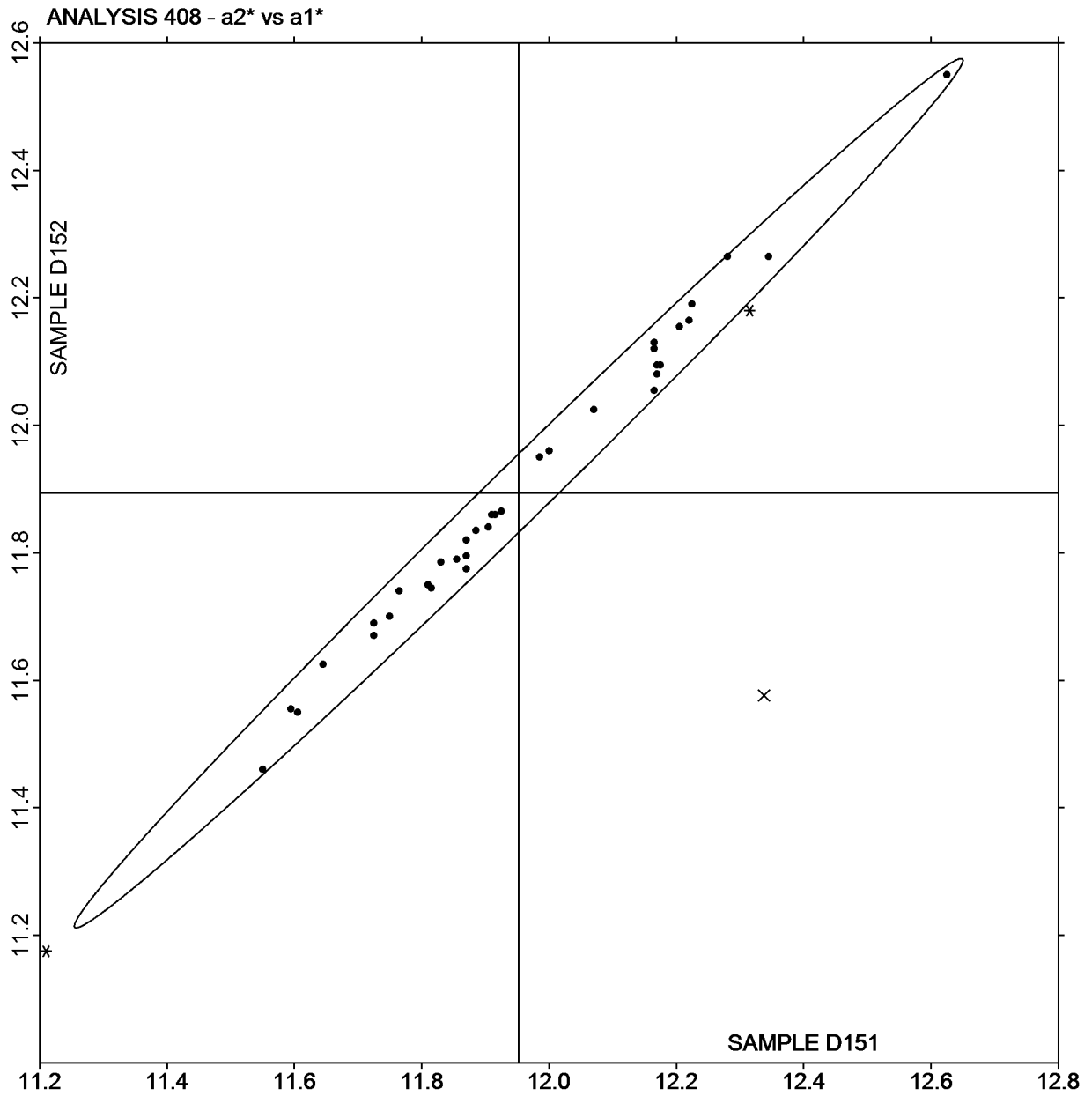
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2* vs a1*

SAMPLE D151 = -11.95

SAMPLE D152 = -11.89



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance

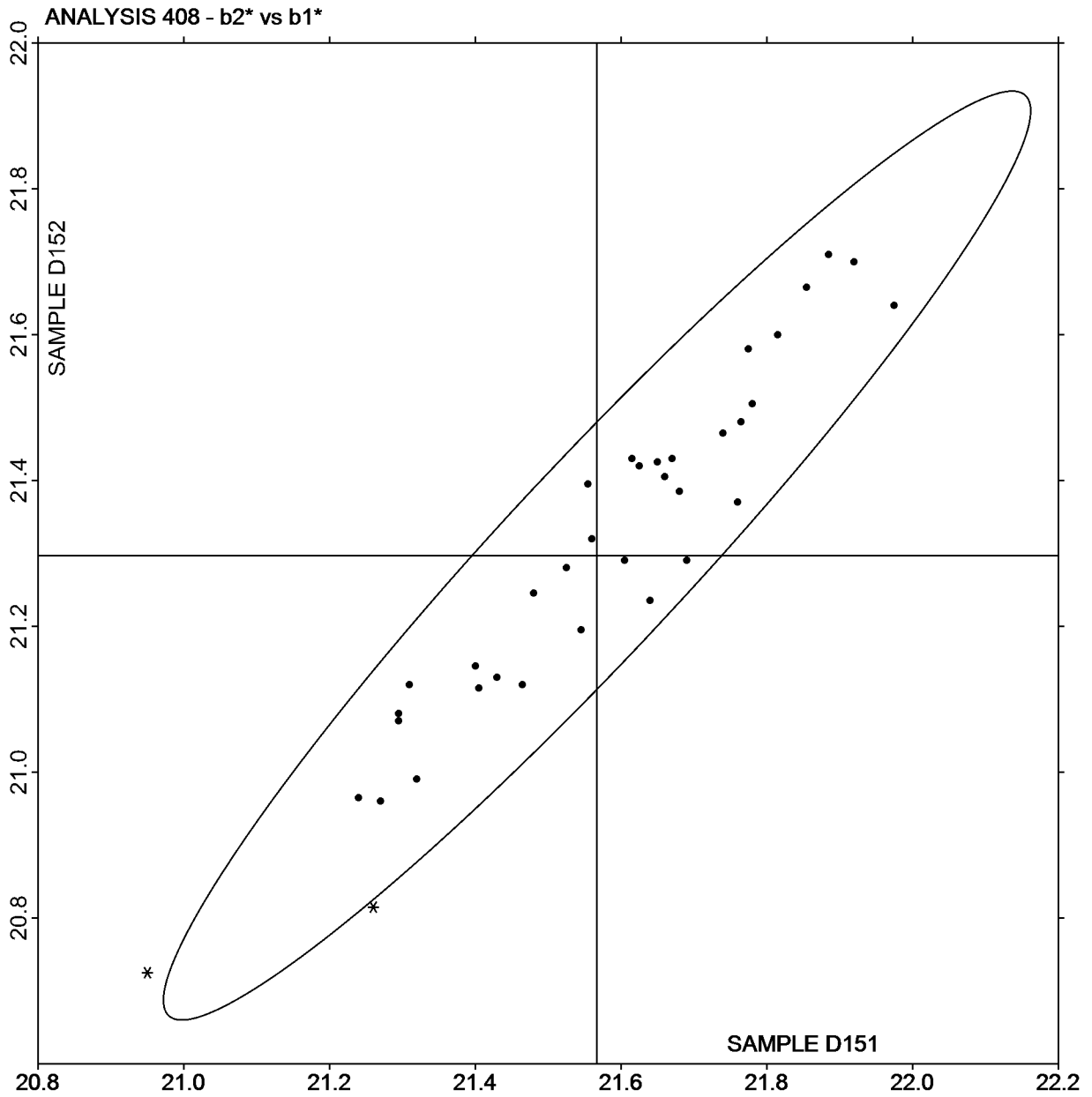
Analysis 408

Color and Color Difference - Paint Chips - 45-0 Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

b2* vs b1*

SAMPLE D151 = 21.57

SAMPLE D152 = 21.30



Plot created using absolute values.

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
23PYBW		D151	59.07	-11.61	21.30	1.04	0.00	-0.36	1.09	SH
		D152	60.11	-11.61	20.95					
2CWVYZ		D151	59.41	-11.78	21.18	0.92	0.05	-0.22	0.95	A0
		D152	60.33	-11.73	20.96					
2EFVBA		D151	59.22	-11.78	21.40	0.84	0.04	-0.28	0.88	HP
		D152	60.05	-11.74	21.13					
2JYQD2		D151	59.21	-11.75	21.21	0.92	0.08	-0.32	0.98	AJ
		D152	60.13	-11.67	20.90					
2K8XKZ		D151	59.32	-11.93	21.27	0.97	0.08	-0.30	1.01	MV
		D152	60.29	-11.85	20.98					
2L3GM3		D151	59.27	-11.72	21.60	0.93	0.12	-0.33	0.99	AJ
		D152	60.20	-11.60	21.27					
2R6RC8	X	D151	62.19	-12.22	21.96	0.79	0.15	-0.32	0.86	HF
		D152	62.98	-12.07	21.64					
2R8HJP		D151	59.39	-11.70	21.51	0.91	0.07	-0.30	0.96	AM
		D152	60.30	-11.63	21.21					
377LP2		D151	58.94	-12.08	21.11	0.99	0.05	-0.28	1.03	X0
		D152	59.93	-12.03	20.83					
3CBH92		D151	58.96	-11.77	21.16	1.00	0.06	-0.31	1.05	XI
		D152	59.96	-11.71	20.85					
3ECMLM		D151	59.26	-11.82	21.16	0.87	0.06	-0.24	0.90	AQ
		D152	60.12	-11.76	20.92					
3JACZ9		D151	59.09	-11.64	21.07	0.92	0.07	-0.33	0.97	AJ
		D152	60.00	-11.57	20.75					
3L24EZ		D151	59.24	-11.43	21.13	0.81	0.04	-0.16	0.82	A0
		D152	60.05	-11.39	20.97					
3UCAB3		D151	59.13	-11.87	21.01	0.86	0.05	-0.23	0.89	XI
		D152	59.98	-11.82	20.78					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
3YKQKR		D151	59.35	-11.91	21.38	0.89	0.04	-0.20	0.91	CE
		D152	60.24	-11.87	21.18					
43ZFM2		D151	59.03	-11.75	20.93	0.95	0.05	-0.21	0.97	XH
		D152	59.97	-11.71	20.72					
4KFUY4		D151	59.02	-11.95	21.26	0.94	0.06	-0.32	0.99	XM
		D152	59.96	-11.89	20.94					
4QPA9R		D151	59.28	-11.74	21.35	0.92	0.08	-0.32	0.97	AJ
		D152	60.19	-11.66	21.03					
4TECF2		D151	59.21	-11.84	21.19	0.90	0.06	-0.19	0.92	XZ
		D152	60.10	-11.79	21.00					
6AWYYV		D151	58.93	-11.66	20.99	0.96	0.07	-0.29	1.00	XI
		D152	59.88	-11.60	20.70					
6NGGTK		D151	59.24	-11.59	21.28	0.96	-0.03	-0.29	1.00	AM
		D152	60.19	-11.62	20.99					
6XZVU2		D151	58.82	-11.94	21.20	0.99	0.09	-0.38	1.06	XM
		D152	59.81	-11.85	20.83					
7JXJY3		D151	59.38	-11.98	21.15	0.72	0.06	-0.19	0.75	X0
		D152	60.10	-11.92	20.96					
7PPU9Z		D151	59.37	-11.73	21.26	0.98	0.07	-0.33	1.04	A0
		D152	60.35	-11.66	20.93					
7XYHLY		D151	59.03	-11.96	21.34	0.99	0.09	-0.31	1.04	PE
		D152	60.01	-11.87	21.03					
86BUEQ		D151	58.78	-11.61	21.16	0.95	0.07	-0.38	1.02	XH
		D152	59.72	-11.54	20.78					
88J4BU		D151	59.27	-11.92	21.19	0.95	0.10	-0.30	0.99	MK
		D152	60.22	-11.82	20.90					
89UNHH	X	D151	59.87	-16.10	21.68	0.91	0.15	-0.36	0.99	MU
		D152	60.78	-15.95	21.32					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
8HMZUY	X	D151	59.04	-12.34	21.43	0.95	0.12	-0.26	0.99	GD
		D152	59.99	-12.23	21.17					
8YN7JK		D151	59.20	-11.73	21.22	0.94	0.07	-0.28	0.98	MM
	D152	60.13	-11.66	20.94						
99APGQ		D151	59.31	-11.83	21.36	0.86	0.04	-0.23	0.88	AJ
	D152	60.16	-11.80	21.14						
9BX7RX		D151	59.26	-11.65	21.06	0.94	0.05	-0.24	0.97	MM
	D152	60.19	-11.61	20.82						
9WFD3R		D151	59.01	-11.95	20.97	0.85	0.05	-0.21	0.87	MM
	D152	59.85	-11.90	20.77						
AC8B6M		D151	59.40	-11.87	21.27	0.86	0.04	-0.27	0.90	MM
	D152	60.26	-11.83	21.00						
AF8J9W		D151	58.74	-11.64	21.26	1.00	0.07	-0.38	1.07	MU
	D152	59.74	-11.57	20.88						
APW87K		D151	59.31	-11.85	21.14	0.87	0.05	-0.20	0.89	HP
	D152	60.18	-11.81	20.95						
AQRQ9L		D151	58.89	-11.75	21.39	0.88	0.02	-0.25	0.91	MI
	D152	59.77	-11.74	21.14						
AYYMVP		D151	58.92	-11.87	21.15	0.88	0.06	-0.23	0.91	XI
	D152	59.80	-11.82	20.92						
B49ZDN		D151	58.97	-11.81	20.91	0.97	0.06	-0.32	1.02	XI
	D152	59.94	-11.75	20.59						
B89CAN		D151	59.25	-11.86	21.45	0.90	0.05	-0.29	0.95	AJ
	D152	60.15	-11.81	21.16						
BFZRUL		D151	59.31	-11.74	21.16	0.93	0.03	-0.31	0.98	A0
	D152	60.24	-11.71	20.85						
BHQT3U		D151	59.05	-11.55	21.34	0.96	0.06	-0.29	1.00	AJ
	D152	60.01	-11.49	21.05						

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
BMMHGG	X	D151	58.81	-12.43	19.48	0.83	0.16	-0.37	0.92	X0
		D152	59.64	-12.28	19.11					
CFG4CQ		D151	59.19	-11.52	21.15	0.95	0.06	-0.29	0.99	MM
		D152	60.13	-11.46	20.86					
CYCVXP		D151	58.91	-11.76	21.14	0.95	0.09	-0.31	1.00	MV
		D152	59.86	-11.68	20.83					
DK76PP		D151	58.90	-11.76	21.13	0.83	0.04	-0.18	0.85	MI
		D152	59.73	-11.72	20.95					
DL2MQQ		D151	59.20	-11.73	21.32	0.96	0.03	-0.25	0.99	MV
		D152	60.16	-11.70	21.07					
DUWPVM		D151	59.14	-11.58	21.20	0.95	0.04	-0.33	1.00	AM
		D152	60.09	-11.54	20.88					
DWYQVK		D151	59.34	-11.70	21.34	0.92	0.05	-0.24	0.95	AJ
		D152	60.26	-11.66	21.10					
E6PQQN		D151	59.17	-11.80	21.50	1.03	0.09	-0.43	1.11	AL
		D152	60.19	-11.72	21.07					
E8ZBVR		D151	58.67	-11.65	21.08	0.96	0.13	-0.43	1.06	MG
		D152	59.62	-11.52	20.65					
ECBNDQ		D151	58.81	-11.74	21.14	0.98	0.07	-0.41	1.06	XI
		D152	59.79	-11.68	20.73					
EG3T7U		D151	59.33	-11.55	21.36	0.95	0.09	-0.27	0.99	GF
		D152	60.28	-11.46	21.09					
EM7U9A	X	D151	57.81	-11.53	20.17	0.78	0.05	-0.25	0.82	HH
		D152	58.59	-11.48	19.92					
FLUFE9		D151	59.32	-11.84	21.34	0.97	0.06	-0.34	1.03	MT
		D152	60.29	-11.78	21.01					
FVLV8J		D151	59.21	-11.70	21.05	0.89	0.05	-0.20	0.91	XI
		D152	60.10	-11.66	20.85					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	CIE L* a* b* Color Values			Color Difference Values				InstrCode	
		Samples	L*	a*	b*	ΔL^*	Δa^*	Δb^*		ΔE^*
GHMJ7P	D151		58.90	-11.74	21.24	0.92	0.09	-0.28	0.97	MI
	D152		59.82	-11.66	20.96					
GZ932C	D151		59.51	-12.27	21.63	0.94	0.08	-0.35	1.01	CA
	D152		60.45	-12.19	21.28					
H7TKYJ	D151		58.87	-11.55	21.03	0.92	0.06	-0.26	0.95	XI
	D152		59.79	-11.49	20.77					
HCYY3A	D151		59.40	-12.17	21.28	0.99	0.10	-0.44	1.09	HW
	D152		60.39	-12.07	20.84					
HDWAWR	D151		59.22	-11.48	21.39	0.98	0.07	-0.31	1.03	AM
	D152		60.20	-11.41	21.08					
HRCMTJ	D151		59.44	-11.81	21.49	0.98	0.07	-0.33	1.03	AM
	D152		60.41	-11.75	21.17					
HYEG9K	D151		58.82	-11.95	21.34	0.98	0.07	-0.28	1.02	XH
	D152		59.79	-11.88	21.07					
J3MJA7	D151		59.00	-11.83	21.18	0.93	0.07	-0.24	0.96	MU
	D152		59.93	-11.76	20.94					
K8HBFH	D151		59.15	-11.62	21.16	0.87	0.04	-0.20	0.89	MM
	D152		60.02	-11.58	20.96					
K9PTDE	D151		59.36	-11.52	21.14	0.87	0.02	-0.20	0.89	XX
	D152		60.23	-11.50	20.95					
KTWX49	D151		59.14	-11.85	21.29	1.02	0.08	-0.38	1.09	AR
	D152		60.15	-11.77	20.91					
L99WLE	D151		59.25	-11.64	21.23	0.95	0.09	-0.26	0.99	AJ
	D152		60.20	-11.55	20.97					
LGYGRC	D151		59.31	-11.78	21.21	0.94	0.07	-0.36	1.01	XI
	D152		60.25	-11.71	20.85					
LJ7WYH	D151		58.89	-11.40	21.07	0.91	0.04	-0.25	0.94	XH
	D152		59.80	-11.36	20.82					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	CIE L* a* b* Color Values			Color Difference Values				InstrCode
		L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
M88HDC	D151	59.13	-11.69	21.61	1.02	-0.05	-0.34	1.07	AJ
	D152	60.15	-11.73	21.28					
MHPZ7J	D151	58.81	-11.96	21.62	1.03	0.06	-0.32	1.07	CA
	D152	59.83	-11.90	21.30					
MNDM2N	D151	59.02	-11.94	21.01	0.98	0.05	-0.30	1.02	XI
	D152	60.00	-11.89	20.71					
MUJGVK	D151	59.18	-11.57	21.02	0.83	0.03	-0.14	0.84	MM
	D152	60.01	-11.54	20.89					
NEKQED	D151	59.39	-11.62	21.19	0.89	0.02	-0.19	0.91	AO
	D152	60.28	-11.61	21.00					
NFFC96	D151	59.02	-11.88	21.08	1.00	0.06	-0.34	1.05	XI
	D152	60.02	-11.82	20.74					
NYB32D	D151	59.19	-11.65	21.28	0.93	0.07	-0.32	0.98	HP
	D152	60.11	-11.58	20.97					
P7PB3E	D151	59.26	-11.84	21.27	0.84	0.03	-0.19	0.86	MV
	D152	60.10	-11.81	21.08					
PD8G28	D151	59.14	-11.92	21.19	0.96	0.11	-0.35	1.03	HP
	D152	60.10	-11.81	20.84					
Q4GHN7	D151	59.09	-11.67	21.22	1.04	0.06	-0.39	1.11	AQ
	D152	60.12	-11.62	20.83					
QEEEQ9	D151	59.22	-11.28	21.20	0.94	0.05	-0.25	0.97	AO
	D152	60.16	-11.23	20.95					
QTYUT8	D151	59.31	-11.86	21.40	0.86	0.03	-0.22	0.89	MV
	D152	60.17	-11.83	21.18					
R674U3	D151	58.95	-11.81	21.23	0.92	0.05	-0.31	0.97	XH
	D152	59.86	-11.76	20.92					
REWPZ2	D151	59.07	-11.57	21.12	0.84	0.06	-0.20	0.87	MM
	D152	59.91	-11.51	20.92					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
RQ83FF		D151	59.35	-11.63	21.00	0.87	0.02	-0.22	0.90	AM
		D152	60.22	-11.62	20.79					
RUK3C8		D151	59.08	-12.01	21.21	0.95	0.11	-0.30	1.00	MV
		D152	60.03	-11.90	20.91					
T46QLZ		D151	59.16	-11.72	21.22	0.94	0.03	-0.27	0.98	MM
		D152	60.10	-11.70	20.96					
TEN8E8		D151	59.18	-11.78	21.12	0.83	0.06	-0.15	0.84	MM
		D152	60.01	-11.72	20.97					
TKBUAD		D151	58.95	-12.03	20.97	0.96	0.07	-0.23	0.99	XI
		D152	59.91	-11.96	20.75					
TYZPQD X		D151	59.04	-12.34	21.43	0.95	0.12	-0.26	0.99	GD
		D152	59.99	-12.23	21.17					
UJYDUD		D151	58.61	-11.57	21.15	1.00	0.05	-0.30	1.05	XH
		D152	59.61	-11.52	20.85					
UXYCHB		D151	59.02	-11.85	21.19	0.89	0.05	-0.21	0.92	XH
		D152	59.91	-11.80	20.98					
V6DKJC		D151	59.33	-11.76	21.35	0.95	0.09	-0.33	1.01	AJ
		D152	60.28	-11.67	21.02					
V6W928		D151	59.22	-11.94	21.37	0.95	0.06	-0.34	1.01	MU
		D152	60.17	-11.88	21.03					
VHL8RA		D151	59.34	-11.84	20.98	0.86	0.04	-0.21	0.88	MM
		D152	60.19	-11.80	20.77					
VK6HK8		D151	59.21	-11.49	21.40	0.93	0.08	-0.30	0.98	AJ
		D152	60.14	-11.42	21.11					
VVAAA2		D151	59.30	-11.59	21.28	0.84	0.08	-0.27	0.88	AJ
		D152	60.14	-11.51	21.01					
VZ7UG7		D151	59.14	-11.67	21.09	0.92	0.07	-0.30	0.97	AJ
		D152	60.06	-11.60	20.79					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

WebCode	Flag	Samples	CIE L* a* b* Color Values			Color Difference Values				InstrCode
			L*	a*	b*	ΔL^*	Δa^*	Δb^*	ΔE^*	
WBX4XC		D151	59.06	-11.69	21.13	0.85	0.04	-0.23	0.88	MI
		D152	59.90	-11.65	20.90					
WHEFDX		D151	59.33	-11.72	21.07	0.85	0.07	-0.26	0.89	AM
		D152	60.18	-11.65	20.81					
X3ZU6R		D151	59.15	-11.55	21.31	0.91	0.06	-0.27	0.95	AQ
		D152	60.06	-11.49	21.04					
XC9299		D151	59.24	-11.61	21.01	0.84	0.04	-0.14	0.85	MM
		D152	60.08	-11.57	20.88					
XF9D69		D151	59.19	-11.83	21.33	0.86	0.06	-0.25	0.90	XI
		D152	60.05	-11.77	21.08					
XLU827		D151	58.81	-12.18	20.83	0.88	0.04	-0.22	0.90	GD
		D152	59.69	-12.15	20.62					
XU9CR6		D151	59.00	-11.48	21.00	0.93	0.08	-0.29	0.98	XI
		D152	59.93	-11.41	20.71					
Z47V4W X		D151	58.93	-11.83	20.73	0.92	0.08	-0.31	0.97	GD
		D152	59.85	-11.76	20.43					
Z7AQMYY		D151	58.98	-11.86	21.08	0.99	0.09	-0.38	1.06	XI
		D152	59.97	-11.77	20.70					
ZKCVG7		D151	59.17	-11.57	21.03	0.85	0.07	-0.19	0.87	AJ
		D152	60.02	-11.51	20.84					
ZNQXWA X		D151	58.53	-11.80	21.79	0.90	0.05	-0.23	0.92	XH
		D152	59.42	-11.75	21.57					
ZR9VQR		D151	59.19	-11.63	21.14	0.93	0.07	-0.38	1.01	MM
		D152	60.12	-11.56	20.76					
ZT4DTT		D151	58.82	-11.78	21.06	0.90	0.05	-0.27	0.94	MJ
		D152	59.72	-11.74	20.79					
ZW6J8Y		D151	59.01	-12.03	21.36	0.93	0.08	-0.34	0.99	XO
		D152	59.94	-11.95	21.03					

**Interlaboratory Testing Program for Color & Appearance
Analysis 409**

**Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer**

Summary Statistics

<u>Samples</u>	<u>L*</u>	<u>a*</u>	<u>b*</u>	<u>ΔL*</u>	<u>Δa*</u>	<u>Δb*</u>	<u>ΔE*</u>
Grand Means							
D151	59.12	-11.76	21.22				
D152	60.05	-11.70	20.94	0.92	0.06	-0.28	0.97
Std Dev Btwn Labs							
D151	0.19	0.17	0.17				
D152	0.18	0.17	0.16	0.06	0.03	0.07	0.07
Statistics based on 104 of 112 reporting participants							

Comments assigned on Data Flags for Test #409

2R6RC8(X) - High L* and b* values. Large Da value.

89UNHH(X) - High L* and Low a* values. Large Da value.

8HMZUY(X) - Low a* values.

BMMHGG(X) - Low a* and b* values. Large Da value.

EM7U9A(X) - Low L* and b* values.

TYZPQD(X) - Low a* values.

Z47V4W(X) - Low b* values.

ZNQXWA(X) - High b* values and low L* values.

Interlaboratory Testing Program for Color & Appearance

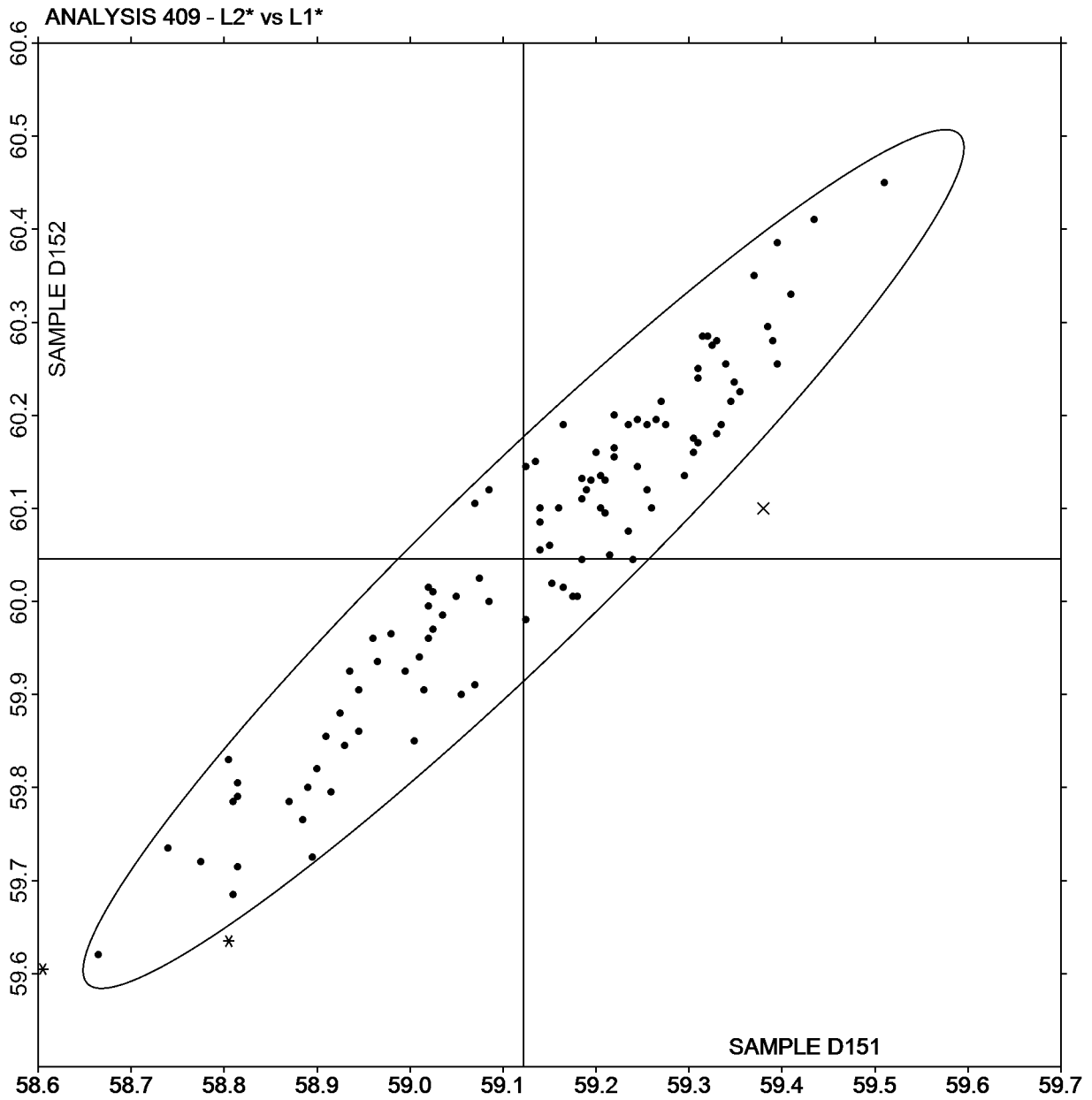
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

L2* vs L1*

SAMPLE D151 = 59.12

SAMPLE D152 = 60.05



Interlaboratory Testing Program for Color & Appearance

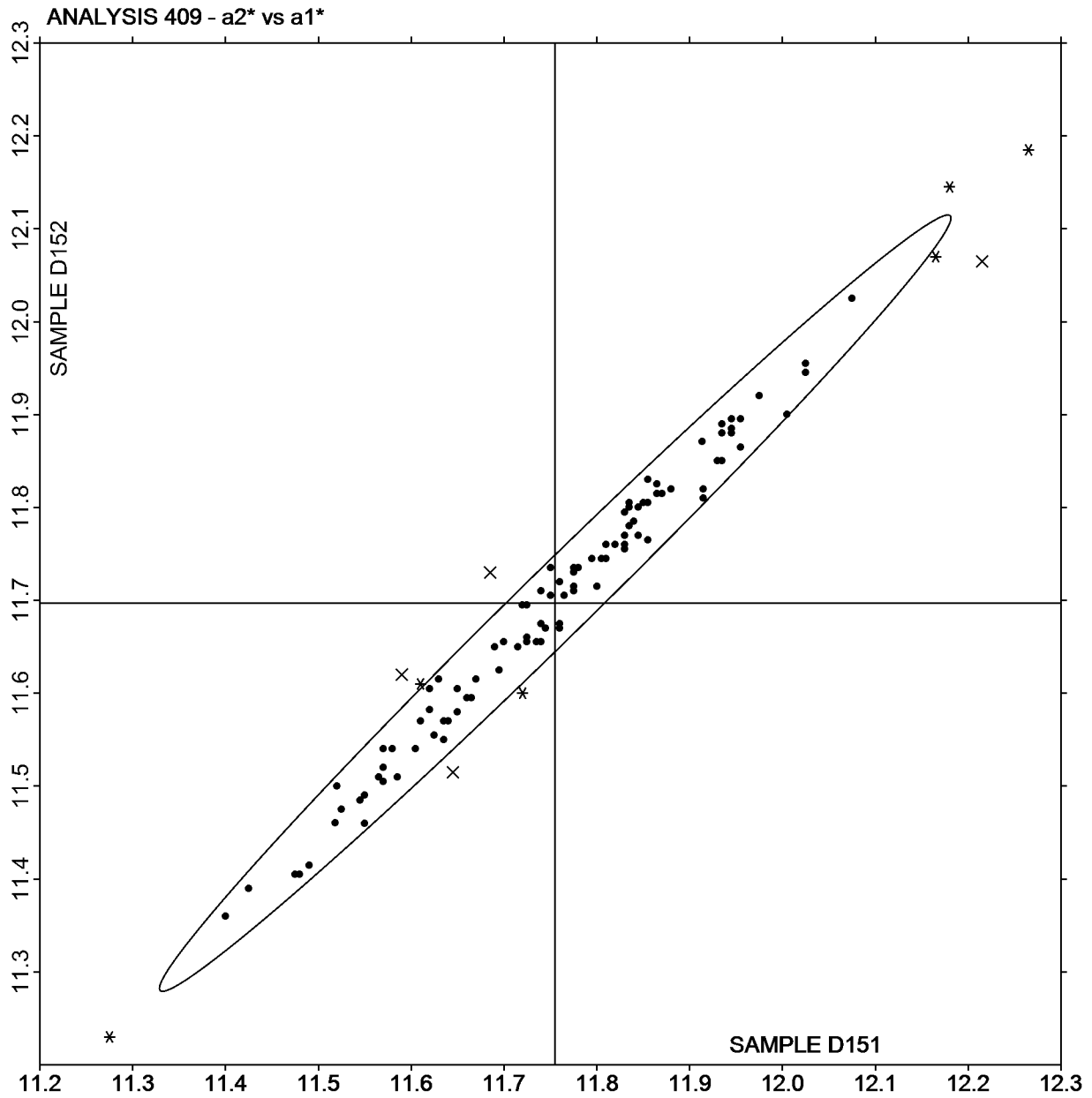
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

a2* vs a1*

SAMPLE D151 = -11.76

SAMPLE D152 = -11.70



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance

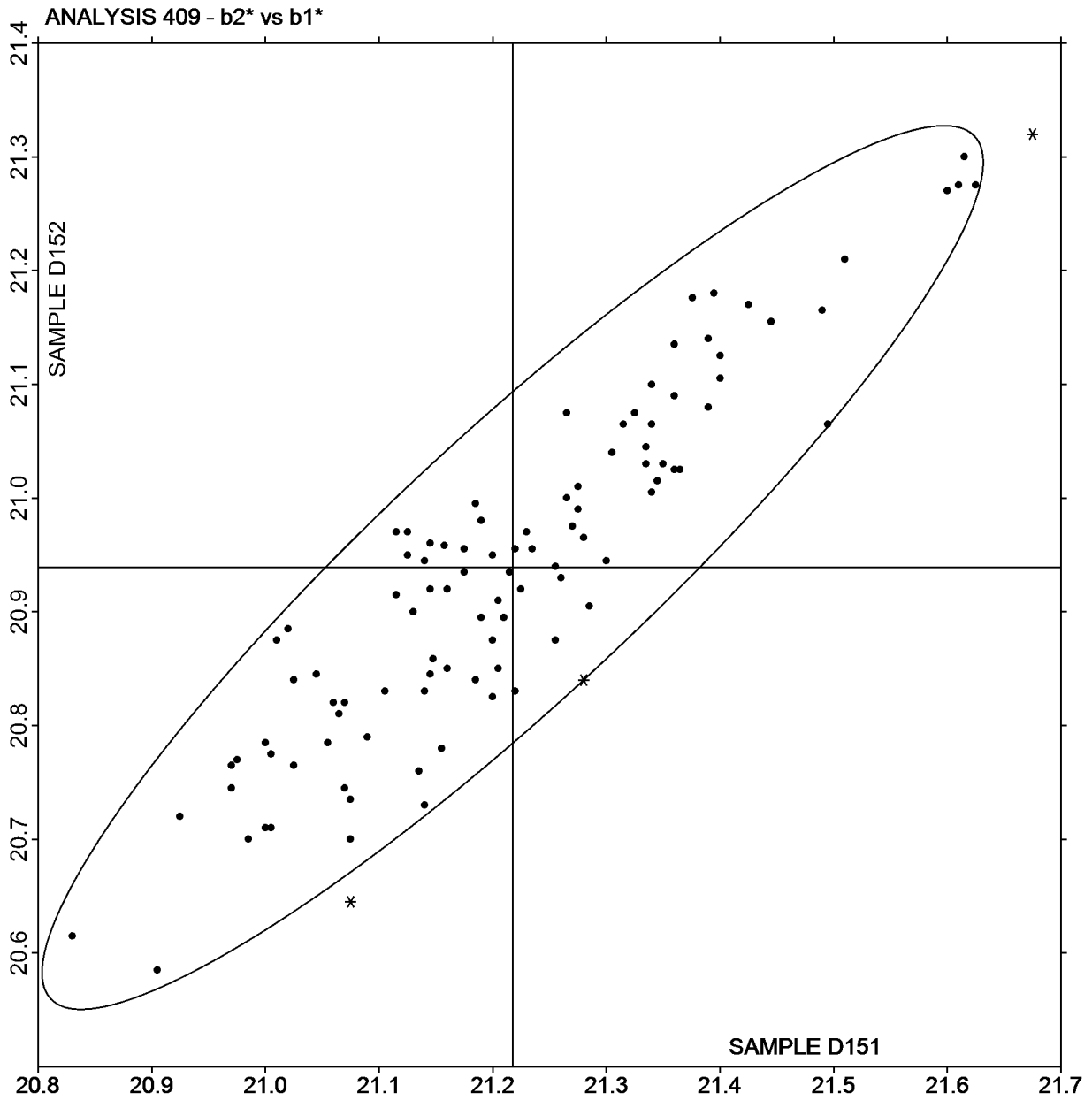
Analysis 409

Color and Color Difference - Paint Chips - Sphere Geometry Instruments
CIE L*a*b* Color Space - Illuminant D65 - CIE 1964 (10 Degree) Observer

b2* vs b1*

SAMPLE D151 = 21.22

SAMPLE D152 = 20.94



Plot created using absolute values.

Interlaboratory Testing Program for Color & Appearance Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample D151																		
23PYBW		10.48	11.92	14.83	16.81	17.51	20.20	26.38	34.84	34.03	27.18	23.35	21.28	21.09	22.58	22.46	20.42	SH
2CWVYZ		10.67	12.23	15.04	17.10	17.93	20.67	27.00	35.12	34.32	27.66	23.62	21.59	21.42	22.83	22.70	20.49	AO
2EFVBA		10.59	11.99	14.88	16.86	17.67	20.48	26.68	35.00	34.10	27.48	23.47	21.32	21.04	22.47	22.33	20.20	HP
2JYQD2		10.41	12.12	14.99	16.88	17.71	20.50	26.96	34.84	33.81	27.43	23.45	21.42	21.30	22.59	22.41	20.47	AJ
2K8XKZ		10.56	12.06	15.06	17.05	17.71	20.52	26.97	35.34	34.25	27.35	23.37	21.45	21.29	22.85	22.67	20.55	MV
2L3GM3		10.51	11.84	14.76	16.81	17.70	20.43	26.72	34.87	34.36	27.55	23.55	21.52	21.33	22.73	22.54	20.45	AJ
2R6RC8	X	12.88X	13.91X	16.92X	18.96X	20.01X	23.06X	30.57X	39.01X	38.06X	30.89X	26.27X	24.31X	23.47X	25.70X	25.29X	23.35X	HF
2R8HJP		10.50	11.96	14.85	16.95	17.79	20.55	26.82	35.08	34.46	27.66	23.67	21.62	21.41	22.86	22.63	20.43	AM
377LP2		10.13	11.94	14.86	16.77	17.49	20.45	27.09	34.84	33.36	26.97	23.01	21.07	21.05	22.34	22.13	19.98	XO
3CBH92		10.52	12.00	14.76	16.76	17.53	20.34	26.54	34.53	33.64	27.17	23.16	21.20	21.02	22.39	22.19	20.26	XI
3JACZ9		10.58	12.16	14.94	16.88	17.62	20.38	26.60	34.62	33.87	27.35	23.36	21.29	21.12	22.47	22.17	19.88	AJ
3L24EZ		10.55	12.10	15.05	17.00	17.80	20.50	26.70	34.85	34.30	27.50	23.60	21.60	21.40	22.95	22.60	20.10	AO
3UCAB3		10.60	12.16	15.01	16.91	17.75	20.57	26.77	34.80	33.74	27.25	23.24	21.33	21.19	22.62	22.12	20.11	XI
3YKQKR		10.52	11.98	14.96	16.98	17.74	20.54	26.85	35.44	34.25	27.39	23.46	21.46	21.23	22.77	22.53	20.25	CE
4KFUY4		10.30	11.98	14.79	16.76	17.56	20.44	26.94	34.91	33.49	27.11	23.17	21.19	21.15	22.46	22.32	20.24	XM
4QPA9R		10.48	11.99	14.93	16.92	17.75	20.52	26.78	34.96	34.31	27.47	23.54	21.50	21.28	22.76	22.48	20.09	AJ
4TECF2		10.57	12.06	14.98	16.91	17.74	20.52	26.80	34.97	33.89	27.32	23.36	21.41	21.28	22.73	22.42	20.40	MJ
6AWYYV		10.58	12.06	14.81	16.81	17.59	20.35	26.53	34.37	33.51	27.15	23.17	21.19	21.03	22.42	22.10	20.04	XI
6NGGTK		10.54	11.97	14.91	16.93	17.74	20.47	26.66	34.82	34.27	27.49	23.57	21.51	21.31	22.70	22.46	20.32	AM
6XZVU2		10.69	12.12	15.12	16.92	17.79	20.67	27.26	34.92	33.41	27.14	23.24	21.39	21.06	22.89	22.73	20.87	HW
7JXJY3		10.59	12.19	15.07	17.09	17.90	20.81	27.36	35.39	33.92	27.41	23.50	21.52	21.49	22.88	22.64	20.55	XO
7PPU9Z		10.61	12.18	15.03	17.01	17.82	20.62	26.90	34.95	34.53	27.60	23.56	21.54	21.44	22.86	22.56	20.11	AO
7XYHLY		10.39	11.82	14.77	16.75	17.48	20.23	26.48	34.98	33.85	27.03	23.13	21.15	20.94	22.50	22.29	20.18	PE
86BUEQ		10.30	11.86	14.64	16.65	17.40	20.15	26.25	34.21	33.42	27.00	23.05	21.09	20.84	22.38	22.33	20.42	MI
88J4BU		10.52	12.08	15.01	16.99	17.78	20.67	26.92	35.04	33.96	27.42	23.36	21.43	21.27	22.73	22.51	20.41	MK

Interlaboratory Testing Program for Color & Appearance Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample D151																		
89UNHH		10.50	12.05	15.00	16.90	17.55	20.45	27.20	35.50	34.10	27.30	23.30	21.40	21.20	22.60	22.50	20.70	MU
8HMZUY		13.18X	11.61	14.70	16.76	17.54	20.44	27.38	35.26	33.43	27.75	23.16	19.47X	21.07	22.25	22.33	20.78	GD
8YN7JK		10.54	12.07	14.93	16.92	17.71	20.51	26.71	34.84	33.97	27.44	23.37	21.42	21.29	22.71	22.47	20.38	MM
99APGQ		10.60	12.06	14.95	16.89	17.77	20.60	26.83	35.05	34.33	27.51	23.48	21.50	21.31	22.78	22.29	20.11	AJ
9BX7RX		10.69	12.23	15.09	17.01	17.78	20.63	26.88	34.83	33.98	27.53	23.48	21.50	21.37	22.76	22.55	20.52	MM
AC8B6M		10.40	12.16	15.06	17.05	17.85	20.70	27.01	35.18	34.18	27.60	23.50	21.57	21.40	22.85	22.60	20.48	MM
AF8J9W		10.24	11.78	14.59	16.53	17.32	20.06	26.41	34.24	33.41	26.95	22.99	21.03	20.89	22.36	22.23	20.23	MU
APW87K		10.75	12.16	15.04	17.04	17.78	20.60	26.86	35.09	34.37	27.55	23.50	21.34	21.07	22.70	22.37	20.41	HP
AQRQ9L		10.29	11.83	14.62	16.55	17.42	20.31	26.44	34.45	33.49	27.00	23.17	21.28	21.00	22.44	22.24	20.14	MI
AYYMVP		10.35	11.84	14.76	16.75	17.56	20.34	26.53	34.50	33.55	27.07	22.99	21.13	20.99	22.37	22.04	19.91	XI
B49ZDN		10.51	12.07	14.96	16.82	17.66	20.48	26.65	34.62	33.60	27.03	23.07	21.21	21.07	22.49	22.14	20.18	XI
BFZRUL		10.54	12.16	15.07	16.97	17.84	20.50	26.83	35.07	34.26	27.50	23.54	21.46	21.29	22.73	22.52	20.39	AO
BHQT3U		10.37	11.94	14.74	16.76	17.56	20.26	26.45	34.77	34.01	27.34	23.37	21.35	21.16	22.51	22.39	20.42	AJ
BMMHGG		10.35	11.32X	14.53	16.24X	17.09X	19.94	26.19	33.95	32.95	26.66	22.70	20.71	20.67	22.12	21.81	19.65	XO
CFG4CQ		10.55	12.11	14.95	16.96	17.72	20.51	26.68	34.80	33.98	27.50	23.44	21.50	21.33	22.76	22.56	20.45	MM
CYCVXP		10.54	11.88	14.77	16.77	17.42	20.09	26.38	34.76	33.73	26.99	23.02	21.09	20.92	22.48	22.30	20.15	MV
DK76PP		10.35	11.89	14.76	16.72	17.51	20.33	26.51	34.43	33.51	27.10	23.05	21.13	21.09	22.41	22.12	20.02	MI
DL2MQQ		10.47	11.97	14.90	16.99	17.64	20.35	26.70	35.09	34.13	27.36	23.36	21.41	21.25	22.74	22.65	20.63	MV
DUWPVM		10.57	12.03	14.94	16.90	17.72	20.39	26.70	34.66	33.94	27.43	23.44	21.40	21.21	22.65	22.47	20.56	AM
E6PQQN		10.38	11.92	14.78	16.77	17.60	20.41	26.70	34.82	33.99	27.42	23.39	21.35	21.14	22.60	22.47	20.30	AL
E8ZBVR		10.22	11.74	14.74	16.44	17.32	20.13	26.33	34.29	33.11	26.73	22.94	21.00	21.01	22.39	22.05	20.15	MG
ECBNDQ		10.24	11.92	14.67	16.62	17.47	20.25	26.49	34.36	33.40	27.02	22.97	21.07	20.95	22.37	21.95	19.93	XI
EKZAJN		10.35	12.05	14.88	16.85	17.64	20.47	26.69	34.77	33.89	27.31	23.29	21.33	21.19	22.64	22.55	20.56	MM
EM7U9A		10.82	11.99	14.94	16.56	17.29	19.92X	26.03	33.96	33.01	26.27X	22.42X	20.66	20.40X	22.22	21.92	20.07	HH
FLUFE9		10.42	12.01	14.98	17.07	17.77	20.57	27.04	35.10	34.19	27.48	23.48	21.49	21.31	22.80	22.58	20.51	MT

Interlaboratory Testing Program for Color & Appearance Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample D151																		
FVLV8J		10.59	12.18	15.04	16.97	17.78	20.63	26.89	34.80	33.84	27.38	23.43	21.53	21.44	22.77	22.40	20.36	XI
GZ932C		10.64	12.11	15.11	17.14	17.87	20.71	27.06	35.77X	34.53	27.52	23.55	21.55	21.32	22.92	22.68	20.54	CA
H7TKYJ		10.53	11.99	14.75	16.73	17.52	20.30	26.35	34.32	33.46	27.05	23.17	21.23	21.15	22.51	22.17	20.16	XI
HCYY3A	X	10.86	12.65X	15.45X	17.55X	18.34X	21.32X	27.82X	35.78X	35.09X	28.16X	23.91	21.79	21.50	23.72X	22.85	20.88	HW
HDWAWR		10.74	12.15	14.90	16.92	17.72	20.39	26.61	34.74	34.16	27.61	23.61	21.50	21.32	22.77	22.54	20.72	AM
HRCMTJ		10.57	12.13	14.14X	16.98	17.83	20.62	27.00	35.19	34.36	27.64	23.70	21.61	21.45	22.89	22.68	20.52	AM
HYEG9K		10.21	11.84	14.57	16.55	17.37	20.22	26.51	34.44	33.41	26.90	22.90	21.06	21.00	22.31	22.05	19.94	XH
J3MJA7		10.46	11.97	14.80	16.80	17.57	20.31	26.69	34.75	33.72	27.13	23.13	21.19	21.02	22.47	22.30	20.20	MU
K8HBFH		10.53	12.10	14.91	16.89	17.72	20.56	26.74	34.73	33.86	27.46	23.39	21.43	21.27	22.64	22.45	20.45	MM
K9PTDE		10.56	12.12	15.04	17.14	17.92	20.57	26.80	34.93	34.40	27.66	23.70	21.64	21.39	22.80	22.58	20.57	XX
KTWX49		10.44	11.94	14.90	16.81	17.69	20.38	26.73	34.83	33.98	27.29	23.32	21.27	21.08	22.56	22.34	20.20	AR
L99WLE		10.50	12.07	14.98	16.94	17.82	20.48	26.79	35.14	34.19	27.55	23.52	21.49	21.30	22.72	22.45	20.27	AJ
LGYGRC		10.48	12.17	15.01	16.99	17.82	20.69	26.96	34.95	34.06	27.52	23.55	21.50	21.41	22.87	22.44	20.44	XI
LJ7WYH		10.53	11.99	14.76	16.75	17.53	20.24	26.37	34.16	33.61	27.19	23.22	21.30	21.21	22.53	22.29	20.25	XH
MHPZ7J		9.98	11.51X	14.48	16.46	17.20	19.97	26.23	34.76	33.73	26.87	22.95	20.95	20.73	22.33	22.13	20.03	CA
MNDM2N		10.48	12.07	14.93	16.83	17.68	20.49	26.77	34.69	33.59	27.07	23.11	21.24	21.06	22.51	22.12	20.00	XI
MUJGVK		10.61	12.16	15.00	16.98	17.79	20.63	26.75	34.71	33.88	27.46	23.42	21.48	21.34	22.67	22.49	20.47	MM
NEKQED		10.69	12.20	15.06	17.03	17.86	20.65	26.88	34.97	34.55	27.64	23.61	21.64	21.48	22.95	22.69	20.17	AO
NFFC96		10.53	12.07	14.87	16.81	17.63	20.49	26.76	34.64	33.63	27.10	23.11	21.26	21.25	22.59	22.15	20.12	XI
NYB32D		10.58	12.09	14.94	16.89	17.68	20.46	26.56	34.83	34.24	27.55	23.50	21.32	20.82	22.48	22.41	20.23	HP
P7PB3E		10.68	12.00	14.94	17.06	17.75	20.42	26.95	35.11	34.17	27.36	23.39	21.43	21.30	22.76	22.67	20.51	MV
PD8G28		10.65	12.12	14.96	16.86	17.62	20.49	26.85	34.98	33.77	27.35	23.32	21.27	20.91	22.65	22.22	20.33	HP
Q4GHN7		10.39	11.94	14.85	16.80	17.64	20.35	26.69	34.66	33.92	27.31	23.36	21.35	21.18	22.60	22.34	20.25	AQ
QEEEQ9		10.50	12.10	14.90	16.95	17.70	20.40	26.60	34.70	34.30	27.60	23.65	21.60	21.50	23.10	22.70	20.10	AO
QTYUT8		10.47	12.00	14.93	17.01	17.70	20.46	26.92	35.17	34.31	27.45	23.44	21.45	21.33	22.78	22.70	20.46	MV

Interlaboratory Testing Program for Color & Appearance Analysis 411

Spectrophotometric - Sphere Geometry Instruments

Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths															Instr Code	
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680		700
Sample D151																		
R674U3		10.35	11.91	14.76	16.70	17.51	20.34	26.70	34.58	33.59	27.09	23.09	21.21	21.10	22.48	22.22	20.12	XH
REWPZ2		10.53	12.05	14.89	16.87	17.64	20.45	26.58	34.66	33.83	27.33	23.30	21.37	21.23	22.64	22.40	20.32	MM
RQ83FF		10.65	12.23	15.20	17.10	17.91	20.67	26.95	35.01	34.18	27.58	23.62	21.60	21.43	22.81	22.55	20.40	AM
RUK3C8		10.48	11.97	14.99	16.86	17.56	20.35	26.74	35.10	33.90	27.07	23.12	21.18	21.03	22.63	22.46	20.34	MV
T46QLZ		10.47	12.04	14.91	16.89	17.69	20.49	26.71	34.81	33.89	27.39	23.34	21.41	21.26	22.69	22.43	20.34	MM
TEN8E8		10.55	12.09	14.98	16.93	17.72	20.56	26.75	34.85	33.86	27.37	23.31	21.39	21.24	22.66	22.44	20.36	MM
TKBUAD		10.57	12.11	14.86	16.70	17.66	20.61	26.89	34.61	33.39	26.95	23.04	21.10	21.10	22.48	22.01	19.88	AQ
TYZPQD		13.18X	11.61	14.70	16.76	17.54	20.44	27.38	35.26	33.43	27.75	23.16	19.47X	21.07	22.25	22.33	20.78	GD
UJYDUD		10.26	11.79	14.51	16.48	17.24	20.05	26.09	34.03	33.07	26.79	22.84	21.04	20.94	22.37	21.86	19.84	XH
UXYCHB		10.49	12.03	14.81	16.76	17.59	20.39	26.66	34.68	33.68	27.10	23.14	21.28	21.14	22.52	22.20	20.04	XH
V6DKJC		10.47	12.18	14.96	16.93	17.76	20.47	26.76	35.06	34.39	27.51	23.57	21.48	21.33	22.70	22.57	20.40	AJ
V6W928		10.43	11.99	14.86	16.95	17.66	20.37	26.90	35.12	34.20	27.28	23.30	21.33	21.20	22.68	22.62	20.42	MV
VHL8RA		10.74	12.30	15.21	17.12	17.98	20.82	27.11	35.03	34.00	27.54	23.51	21.56	21.39	22.76	22.54	20.50	MM
VK6HK8		10.61	11.92	14.85	16.83	17.63	20.35	26.54	34.73	34.32	27.53	23.57	21.53	21.38	22.69	22.48	20.43	AJ
VVAAA2		10.54	12.09	14.96	16.93	17.75	20.47	26.73	34.84	34.49	27.60	23.59	21.54	21.33	22.79	22.43	20.25	AJ
VZ7UG7		10.49	12.05	14.99	16.92	17.73	20.49	26.72	34.76	34.15	27.31	23.40	21.37	21.20	22.64	22.20	19.89	AJ
WBX4XC		10.43	12.01	14.88	16.84	17.60	20.49	26.62	34.64	33.68	27.27	23.28	21.33	21.27	22.60	22.34	20.23	MI
WHEFDX		10.80	12.24	15.03	17.04	17.87	20.56	26.87	34.85	33.94	27.51	23.51	21.45	21.24	22.30	22.31	20.35	AM
X3ZU6R		11.18	12.03	14.85	16.83	17.64	20.34	26.62	34.75	34.01	27.43	23.51	21.43	21.27	22.74	22.47	20.41	AQ
XC9299		10.68	12.21	15.07	17.04	17.84	20.67	26.86	34.90	33.95	27.49	23.44	21.54	21.40	22.80	22.55	20.46	MM
XF9D69		10.46	12.02	14.83	16.86	17.70	20.58	26.83	34.80	33.85	27.39	23.37	21.44	21.30	22.67	22.24	20.22	XI
XLU827		10.05	11.73	14.55	17.02	18.22X	20.55	26.94	34.40	33.13	27.14	22.47X	20.60	21.06	22.36	22.33	19.68	GD
XU9CR6		10.50	12.09	14.87	16.86	17.64	20.45	26.60	34.49	33.59	27.20	23.33	21.41	21.32	22.68	22.26	20.31	XI
Z7AQMY		10.38	12.07	14.88	16.76	17.56	20.41	26.70	34.76	33.56	27.00	23.08	21.24	21.13	22.50	22.22	20.15	XI
ZKCVG7		10.66	12.12	15.05	16.94	17.73	20.38	26.65	34.81	34.08	27.38	23.46	21.43	21.28	22.66	22.35	20.22	AJ

Interlaboratory Testing Program for Color & Appearance Analysis 411

Spectrophotometric - Sphere Geometry Instruments
Reflectance at 16 Selected Wavelengths

WebCode	Data Flag	Spectrophotometric Reflectance values (as %) at selected wavelengths																Instr Code
		400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	
Sample D151																		
ZNQXWA		9.72	11.33X	14.10X	16.21X	17.03X	19.83X	25.99X	33.91	33.23	26.87	22.73	20.79	20.68	21.98X	21.82	19.81	XH
ZR9VQR		10.38	12.14	14.99	16.90	17.73	20.54	26.75	34.76	33.90	27.48	23.44	21.46	21.30	22.68	22.50	20.51	MM
ZT4DTT		10.36	11.96	14.64	16.72	17.54	20.41	26.80	34.28	33.38	27.03	23.07	21.07	20.92	22.22	22.10	20.20	HU
ZW6J8Y		10.32	11.89	14.71	16.65	17.56	20.39	26.92	34.94	33.47	27.04	23.10	21.19	21.16	22.52	22.32	20.17	XO

Summary Statistics

Grand Means																	
	10.54	12.01	14.87	16.85	17.65	20.44	26.73	34.80	33.87	27.30	23.30	21.30	21.18	22.61	22.37	20.28	
Std Dev Btwn Labs																	
	0.42	0.17	0.18	0.17	0.18	0.18	0.26	0.33	0.38	0.26	0.25	0.33	0.20	0.20	0.21	0.24	

Comments assigned on Data Flags for Test #411

2R6RC8 (X) - High % reflectance data at all wavelengths.

HCYY3A (X) - High % reflectance data at all wavelengths.

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample H151			Sample H152			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
2EFVBA	X	43.55	0.09	0.21	50.25	-1.27	-2.05	GL
2WZGY7		43.28	-0.18	-0.42	50.95	-0.57	-0.92	GN
377LP2		43.80	0.34	0.79	51.78	0.26	0.42	GL
3CBH92		42.68	-0.78	-1.80	50.48	-1.04	-1.69	GL
3ECMLM		43.93	0.47	1.08	52.03	0.51	0.83	PC
3VN266	X	43.83	0.37	0.85	50.23	-1.29	-2.09	GB
4QPA9R	X	44.73	1.27	2.92	51.68	0.16	0.26	MW
6XZVU2		43.13	-0.33	-0.77	50.53	-0.99	-1.61	GK
86BUEQ		43.83	0.37	0.85	52.50	0.99	1.60	GL
8HMZUY		43.50	0.04	0.10	51.40	-0.12	-0.19	GB
8Z3D73		44.08	0.62	1.42	52.50	0.99	1.60	GL
AF8J9W	X	44.98	1.52	3.49	50.20	-1.32	-2.14	GK
AT8HWT	X	46.40	2.94	6.78	54.68	3.16	5.13	GK
AYYMVP		43.45	-0.01	-0.02	51.28	-0.24	-0.39	MH
BFZRUL		42.98	-0.48	-1.11	51.00	-0.52	-0.84	GQ
BMMHGG		44.13	0.67	1.54	51.90	0.39	0.63	GK
CFG4CQ	*	44.43	0.97	2.23	52.03	0.52	0.84	GL
CUX43P		44.23	0.77	1.77	52.65	1.14	1.84	GL
CYCVXP		43.08	-0.38	-0.88	51.25	-0.27	-0.43	RA
DK76PP		43.63	0.17	0.38	51.68	0.16	0.26	GL
DWYQVK		43.93	0.47	1.08	51.65	0.14	0.22	GL
E6PQQN		43.50	0.04	0.10	51.98	0.46	0.75	GL
EG2YMN		43.43	-0.03	-0.08	50.95	-0.57	-0.92	GK
EG3T7U		43.40	-0.06	-0.13	51.40	-0.12	-0.19	GL
EVN9AU		43.53	0.07	0.15	51.58	0.06	0.10	GL
F3YPJE	X	42.00	-1.46	-3.36	50.40	-1.12	-1.81	RA
FVLV8J	X	45.40	1.94	4.47	50.33	-1.19	-1.93	GL
GQ7P6H		43.75	0.29	0.67	51.78	0.26	0.42	GA
H6X3WH	*	43.90	0.44	1.02	52.95	1.44	2.33	GK
H7TKYJ		43.00	-0.46	-1.05	50.50	-1.02	-1.65	GL
HCYY3A		43.63	0.17	0.38	52.00	0.49	0.79	GL
JHZVYE		42.73	-0.73	-1.69	50.83	-0.69	-1.12	GL
K8HBFH		43.25	-0.21	-0.48	51.40	-0.12	-0.19	GL
KW2LKJ		43.78	0.32	0.73	51.00	-0.52	-0.84	GK
LJ7WYH		43.68	0.22	0.50	51.68	0.16	0.26	GL
LYWWR4		43.75	0.29	0.67	51.48	-0.04	-0.06	MW
M88HDC		42.95	-0.51	-1.17	51.00	-0.52	-0.84	MW
MHPZ7J		42.73	-0.73	-1.69	50.45	-1.07	-1.73	GL
MNDM2N		43.29	-0.17	-0.40	51.26	-0.26	-0.42	GL
NFFC96		43.25	-0.21	-0.48	51.00	-0.52	-0.84	GL
NYB32D		43.50	0.04	0.10	51.55	0.04	0.06	XX
P7PB3E		43.20	-0.26	-0.59	51.45	-0.07	-0.11	GL
QYMGND		43.33	-0.13	-0.31	51.30	-0.22	-0.35	GL
R674U3		43.73	0.27	0.61	51.88	0.36	0.58	GL
REWPZ2		43.18	-0.28	-0.65	51.40	-0.12	-0.19	GL

Interlaboratory Testing Program for Color & Appearance

Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

WebCode	Data Flag	Sample H151			Sample H152			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
RQ83FF		44.13	0.67	1.54	52.45	0.94	1.52	GK
TKBUAD		43.33	-0.13	-0.31	51.23	-0.29	-0.47	GK
TYZPQD		43.25	-0.21	-0.48	51.58	0.06	0.10	GB
UFYAZ7	X	44.10	0.64	1.48	48.18	-3.34	-5.42	GL
UJYDUD		42.50	-0.96	-2.21	50.78	-0.74	-1.20	GL
UXYCHB		43.93	0.47	1.08	52.10	0.59	0.95	GK
V6W928		42.78	-0.68	-1.57	50.78	-0.74	-1.20	GL
VHL8RA		43.40	-0.06	-0.13	51.98	0.46	0.75	RA
VK6HK8		43.30	-0.16	-0.36	50.98	-0.54	-0.88	GN
VVAAA2	*	43.48	0.02	0.04	50.38	-1.14	-1.85	GK
VZ7UG7		43.73	0.27	0.61	51.80	0.29	0.46	XX
WBX4XC		43.30	-0.16	-0.36	51.33	-0.19	-0.31	GL
WQAD68		43.48	0.02	0.04	52.05	0.54	0.87	GK
WVKNW2		43.88	0.42	0.96	51.93	0.41	0.67	GL
WWZTP8		42.90	-0.56	-1.28	50.78	-0.74	-1.20	GL
XF9D69		42.68	-0.78	-1.80	50.68	-0.84	-1.36	GN
XLU827		43.35	-0.11	-0.25	51.28	-0.24	-0.39	GN
YC3CFV		43.88	0.42	0.96	52.05	0.54	0.87	GN
YDYRP8		43.65	0.19	0.44	51.98	0.46	0.75	GL
YLNDV6		43.43	-0.03	-0.08	51.38	-0.14	-0.23	GX
YMP9K3		43.78	0.32	0.73	52.55	1.04	1.68	GK
YQHAKV		43.00	-0.46	-1.05	51.58	0.06	0.10	GK
YTPRJR	X	44.70	1.24	2.86	51.63	0.11	0.18	GL
Z47V4W	X	44.05	0.59	1.36	49.15	-2.37	-3.84	GB
Z7WXB6		44.28	0.82	1.88	52.78	1.26	2.05	GK
ZW6J8Y		43.10	-0.36	-0.82	51.70	0.19	0.30	GN

Summary Statistics

Grand Means	43.46	Gloss Units	51.52	Gloss Units
Std Dev Btwn Labs	0.43	Gloss Units	0.62	Gloss Units
Statistics based on 61 of 71 reporting participants				

Interlaboratory Testing Program for Color & Appearance
Analysis 440
60 Degree Gloss - Paint Chips
ASTM Method D 523

Comments on assigned Data Flags for Test #440

2EFVBA(X) - Inconsistent in testing between samples.

3VN266(X) - Inconsistent in testing between samples and inconsistent in testing within both samples.

4QPA9R(X) - High data for Sample H151.

AF8J9W(X) - High data for Sample H151.

AT8HWT(X) - Data for both samples are high.

F3YPJE(X) - Low data for Sample H151.

FVLV8J(X) - High data for Sample H151.

UFYAZ7(X) - Low data for Sample H152.

YTPRJR(X) - High data for Sample H151.

Z47V4W(X) - Low data for Sample H152.

Interlaboratory Testing Program for Color & Appearance

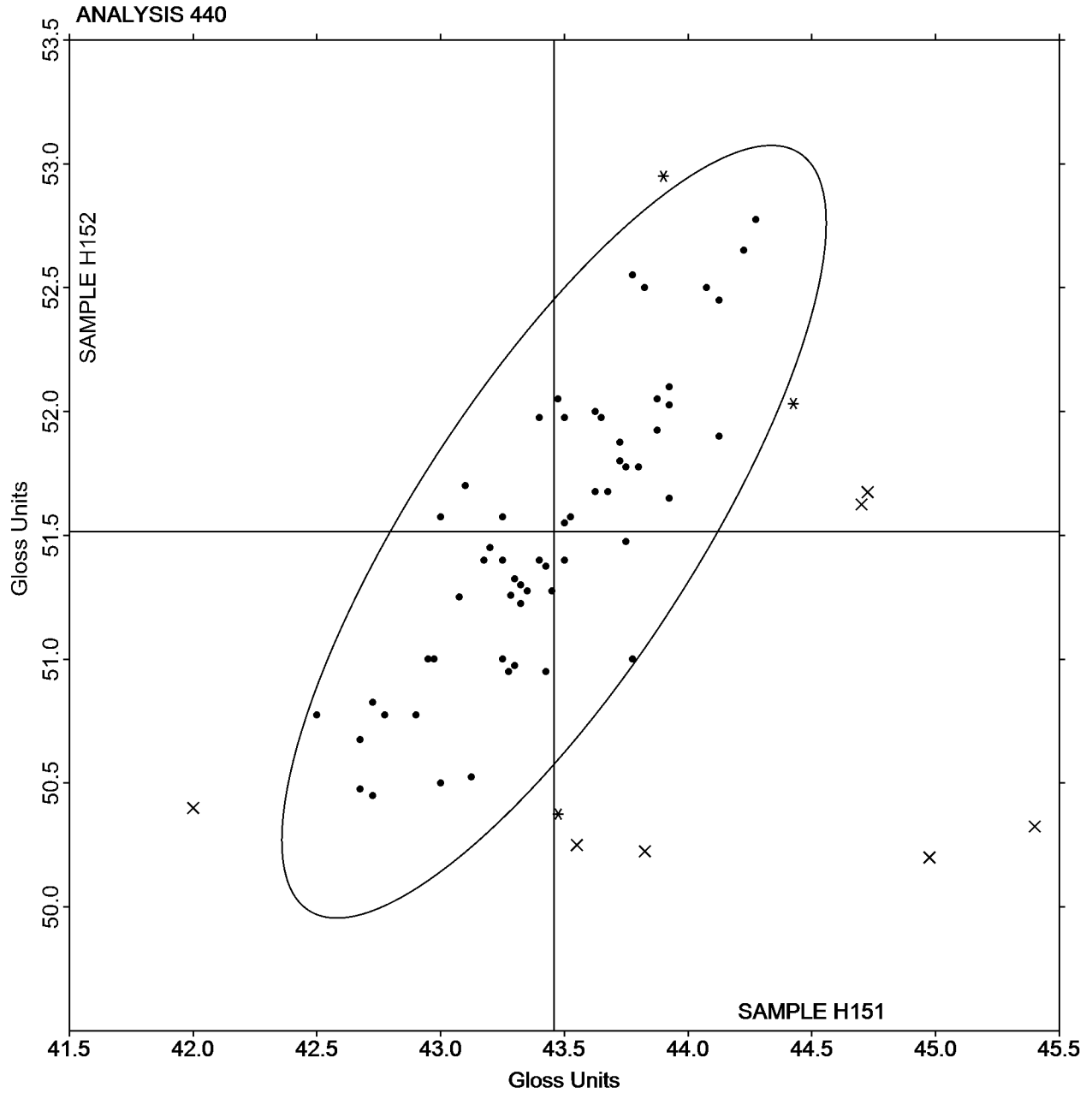
Analysis 440

60 Degree Gloss - Paint Chips

ASTM Method D 523

SAMPLE H151 = 43.46 Gloss Units

SAMPLE H152 = 51.52 Gloss Units



Interlaboratory Testing Program for Color & Appearance

Analysis 442

85 Degree Gloss - Paint Chips

ASTM Method D 523

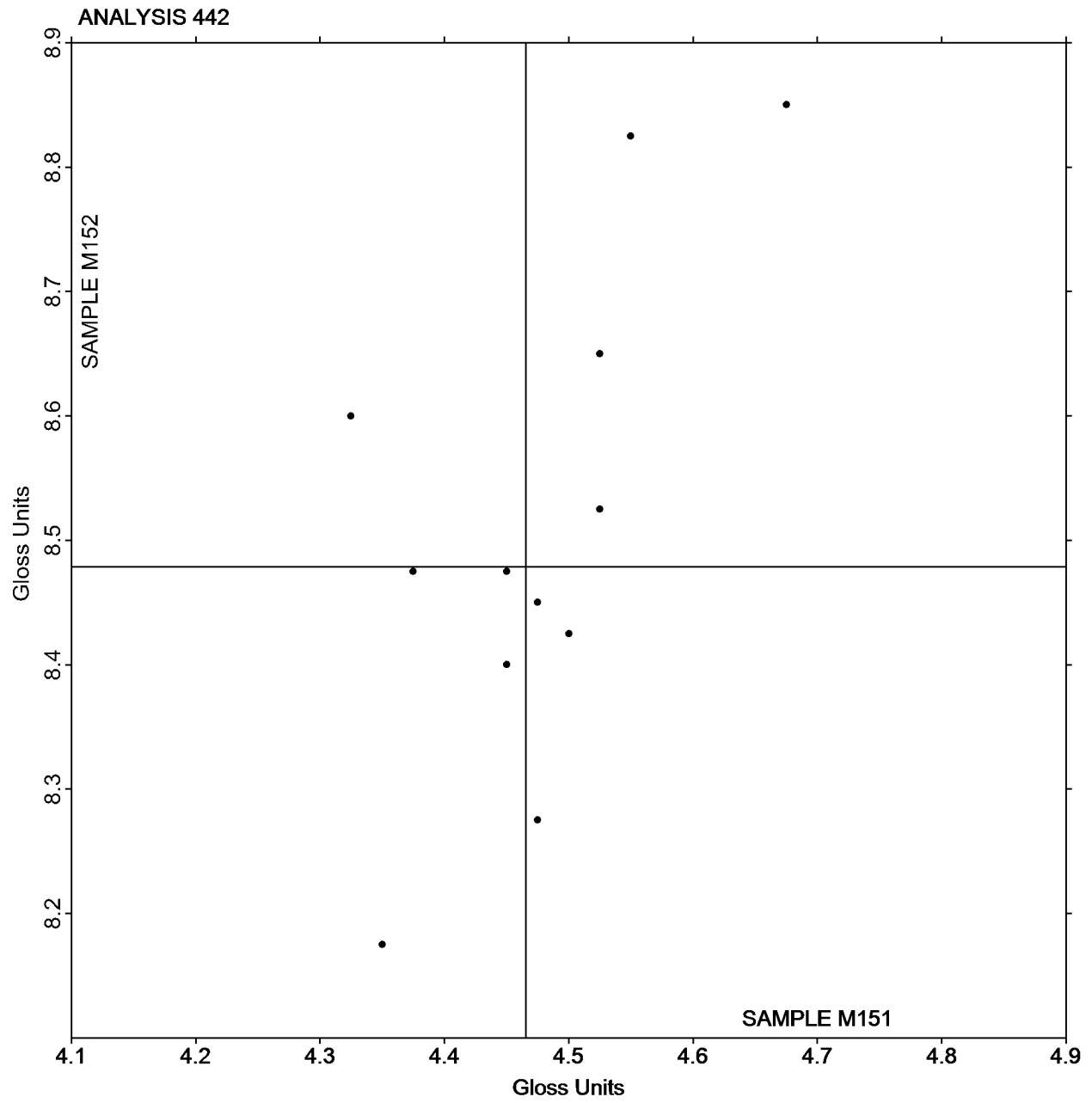
WebCode	Data Flag	Sample M151			Sample M152			Instr Code
		Lab Mean	Difference from Grand Mean	Comparative Performance Value	Lab Mean	Difference from Grand Mean	Comparative Performance Value	
3CBH92		4.35	-0.12	-1.21	8.18	-0.30	-1.37	GL
H7TKYJ		4.48	0.01	0.10	8.28	-0.20	-0.92	RA
K8HBFH		4.53	0.06	0.62	8.53	0.05	0.21	GN
MHPZ7J		4.38	-0.09	-0.95	8.10	-0.38	-1.71	GL
NFFC96		4.53	0.06	0.62	8.65	0.17	0.77	GL
P7PB3E		4.38	-0.09	-0.95	8.48	0.00	-0.02	GL
REWPZ2		4.45	-0.02	-0.16	8.48	0.00	-0.02	GL
UJYDUD		4.45	-0.02	-0.16	8.40	-0.08	-0.36	GL
V6W928		4.55	0.08	0.89	8.83	0.35	1.56	GL
VK6HK8		4.33	-0.14	-1.47	8.60	0.12	0.55	GN
XF9D69		4.68	0.21	2.20	8.85	0.37	1.67	GL
XLU827		4.48	0.01	0.10	8.45	-0.03	-0.13	GN
ZW6J8Y		4.50	0.03	0.36	8.43	-0.05	-0.24	GN

Summary Statistics

Grand Means	4.47	Gloss Units	8.48	Gloss Units
Std Dev Btwn Labs	0.10	Gloss Units	0.22	Gloss Units
Statistics based on 13 of 13 reporting participants				

SAMPLE M151 = 4.47 Gloss Units

SAMPLE M152 = 8.48 Gloss Units



Instrument Code List - Report# 174

Instrument information as provided by laboratories

<u>Analysis</u>	<u>Analysis Name</u>
440	Gloss 60 Degree (Paint Chips)

Instrument code and description

GA	BYK Gardner Color - Guide Gloss
GB	BYK Gardner Spectro - Guide Sphere Gloss
GK	BYK-Gardner micro-gloss (60)
GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
GQ	BYK-Gardner haze-gloss
GX	BYK-Gardner (model not specified)
MH	X-Rite/Macbeth Color-Eye XTH
MW	Minolta Multi-Gloss 268
PC	Picogloss 503 Erichson
RA	Rhopoint Novo-Gloss Glossmeter
XX	Instrument make/model not specified by lab

442	Gloss 85 Degree (Paint Chips)
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Instrument code and description

GL	BYK-Gardner micro-TRI-gloss
GN	BYK-Gardner new micro-TRI-gloss
RA	Rhopoint

Instrument Code List - Report# 174

Instrument information as provided by laboratories

Analysis Analysis Name

408 Color & Color Difference (Paint Chips) - 45-0

Instrument code and description

AE	ACS Chroma-Sensor CS-3
FA	BYK Mac
GB	BYK-Gardner spectro-guide sphere gloss
GE	BYK-Gardner spectro-guide (45/0)
GH	BYK-Gardner Color-View
HG	Hunter ColorQUEST
HK	Hunter MiniScan XE (45/0)
HW	Hunter LabScan XE
HY	Hunter Color Flex 45/0
MA	Macbeth
MG	Macbeth 1500/PLUS or 2025+ Color Eye
MU	Minolta
TO	Topcon SR-3 Spectroradiometer
XD	X-Rite 500 Series SpectroDensitometer
XK	X-Rite MA100 Multi-Angle SpectroPhotometer
XM	X-Rite MA58 Multi-Angle SpectroPhotometer
XN	X-Rite MA68 Multi-Angle SpectroPhotometer
XO	X-Rite MA68 II Multi-Angle SpectroPhotometer
XR	X-Rite 968 Portable SpectroPhotometer
XU	X-Rite 964 Portable SpectroPhotometer
XX	Instrument make/model not specified by lab
XZ	X-Rite

409 Color & Color Difference (Paint Chips) Sphere

Instrument code and description

AJ	ACS-Datacolor 600	MT	Minolta CM-2600d
AL	ACS-Datacolor Intl. Dataflash 100	MU	Minolta
AM	ACS-Datacolor 600 Plus	MV	Minolta CM-3000d Series Spectrophotometer
AO	ACS-Datacolor 650X	PE	Perkin Elmer Spectrophotometer
AQ	ACS-Datacolor 600X	SH	SIMADZU UV 3101PC
AR	Datacolor 400	XH	X-Rite Color i5
CA	Cary 5000	XI	X-Rite Color i7
CE	Cary 500	XM	X-Rite SP62 Portable Sphere Spectrophotometer
GD	BYK-Gardner spectro-guide sphere	XO	X-Rite SP64 Portable Sphere Spectrophotometer
GF	BYK-Gardner The Color Sphere (TCS)	XX	Instrument make/model not specified by lab
HF	Hunter ColorFlex Diffuse	XZ	X-Rite
HH	Hunter ColorQUEST XE		
HP	Hunter UltraScan PRO		
HW	Hunter UltraScan XE		
MG	Macbeth 2180 Color Eye		
MI	Macbeth Color i 5		
MJ	Macbeth Color-Eye 3000		
MK	Macbeth Color-Eye 7000		
MM	Macbeth Color-Eye 7000a		

Instrument Code List - Report# 174

Instrument information as provided by laboratories

Analysis Analysis Name

411 Spectrophotometric (Paint Chips) - Sphere

Instrument code and description

A J ACS-Datcolor 600
A L ACS-Datcolor Intl. Dataflash 100
AM ACS-Datcolor 600 Plus
AO ACS-Datcolor 650
AQ ACS-Datcolor 600X
A R Datcolor 400
CA Cary 5000
CE Cary 500
GD BYK-Gardner spectro-guide sphere
HF Hunter ColorFlex Diffuse
HH Hunter ColorQUEST XE
HP Hunter UltraScan PRO
HU Hunter UltraScan
HW Hunter UltraScan XE
MG Macbeth 2180 Color Eye
M I Macbeth Color i5
M J Macbeth Color-Eye 3000 Spectrophotometer
M K Macbeth Color-Eye 7000 Spectrophotometer
M M Macbeth Color-Eye 7000a
M T Minolta CM-2600d
M U Minolta
M V Minolta CM-3000d Series Spectrophotometer
P E Perkin Elmer Spectrophotometer
S H SIMADZU UV 3101PC
X H X-Rite Color i5
X I X-Rite Color i7
X M X-Rite SP62
X O X-Rite SP64
X X Instrument make/model not specified by lab